

T&E AGENDA: 10-06-14
ITEM: d (1)

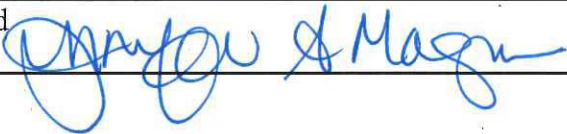
Memorandum

TO: TRANSPORTATION &
ENVIRONMENT COMMITTEE

FROM: Kerrie Romanow
Harry Freitas

SUBJECT: BIRD-SAFE BUILDING DESIGN
STANDARDS

DATE: September 25, 2014

Approved  Date 9-26-14

RECOMMENDATION

1. Accept this staff report on bird-safe building design standards and direct staff to proceed with implementation of voluntary bird friendly measures.
2. Provide input on bird-safe building design mandatory guidelines.
3. Cross reference this item to the October 28, 2014 City Council meeting for full City Council review and approval.

BACKGROUND

At the May 20, 2014 City Council meeting and Public Hearing regarding the Diridon Plan, several speakers commented about the importance of bird-safe building design. A supplemental memo dated June 6, 2014, responded to City Council questions and public comments raised at that meeting. The supplemental memo recommended: 1) considering guidelines for city-wide implementation rather than only for the Diridon Station Area, 2) conducting a study to identify the severity of the bird strike issue, confirming where and under what situations it is a significant issue, and identifying effective mitigations for given situations and locations, 3) studying the cost implications to development, and 4) having Council review this work item as part of its next Council Priority Setting Session.

At the June 11, 2014 Rules and Open Government Committee meeting, a memo from Councilmembers Liccardo and Chu recommended placement of an item on the June 17, 2014 City Council Agenda directing the City Manager to return to Council in six months with development guidelines that promote bird-safe building design citywide. Staff was directed to return to the Transportation and Environment Committee in Fall 2014 with options for implementing bird-safe building design standards in collaboration with environmental partners such as the Santa Clara Audubon Society and The Sierra Club.

ANALYSIS

Overview of Bird Status

Birds provide a variety of beneficial services that are vital to the natural world we depend upon including: plant pollination, seed dispersal, insect and pest control, and soil formation¹. In the last 40 years, bird populations have been in decline in the United States². Overall, 25 percent of bird species are now on the U.S. Watchlist of Birds of Conservation Concern³. Initial research has identified building bird collisions, or “strikes,” as one contributor to the decline of bird populations in an urban area. According to national studies, between 350 million and 1 billion birds are killed annually by building strikes in the United States, with roughly 56 percent of mortality at low-rises, 44 percent at residences, and less than 1 percent at high-rises⁴.

San Jose is located along the Pacific Flyway, through which at least a billion birds migrate each year⁵. Existing data for Santa Clara County is not readily available for the total bird population, the number of bird strikes, or the number of species affected. Based on national research, the Santa Clara Valley Audubon Society extrapolates estimated bird deaths in San Jose at over 1 million per year. Anecdotal data from the Silicon Valley Wildlife Center (SVWC) shows their center has received about two dozen injured/dead birds from building collisions each year over the last two years (21 in 2014, 24 in 2013). SVWC acknowledges that this data is not scientific and does not include any dead birds that would otherwise be consumed by other animals such as cats or crows, or handled/disposed of by individuals or other organizations.

Addressing Bird-Safe Building Design Standards

Bird building strikes have been linked to several specific building design factors. Strikes occur because birds fly into reflective glass that they perceive to be trees or the sky, or to fend off a threat (their own reflection). Birds can also strike clear glass while attempting to reach habitat and sky seen through glass corridors, windows positioned opposite each other in a room, ground floor lobbies, glass balconies, or where glass walls meet at corners. Building up-lighting can also disorient birds, causing them to circle in confusion and collide with structures, each other, or even the ground, in what has been termed “fatal light attraction”. At night, interior lighting can attract birds, thereby increasing the potential for bird strikes⁶.

¹ Sekercioglu, Cagan H., “Increasing Awareness of Avian Ecological Function”, Stanford University. Web. Aug. 4, 2014. <http://web.stanford.edu/~cagan/Sekercioglu_TREE2006.pdf>

² “The State of the Birds” (2009), North American Bird Conservation Initiative. Web. July 28, 2014. <https://www.pwrc.usgs.gov/BBS/State_of_the_Birds_2009.pdf>

³ “United States Watchlist of Birds of Conservation Concern” (2007), American Bird Conservancy. Web. Aug. 4, 2014. <<http://www.abcbirds.org/abcprograms/science/watchlist/index.html>>

⁴ Loss, Scott R., Will, Tom, Loss, Sara S., and Marra, Peter P., “Bird–building Collisions in the United States: Estimates of Annual Mortality and Species Vulnerability” (2014), BioOne. Web. Aug. 4, 2014. <<http://www.bioone.org/doi/abs/10.1650/CONDOR-13-090.1>>

⁵ “Pacific Flyway”, Audubon Magazine. Web. July 30, 2014. <<http://conservation.audubon.org/pacific-flyway>>

⁶ Sexton, Lee and Keyes, Timothy, “Bird Strikes at Atlanta’s Commercial Buildings”, Georgia Department of Natural Resources. Web. Aug. 4, 2014. <<http://www.georgiawildlife.com/sites/default/files/uploads/wildlife/nongame/pdf/Bird%20strikes%20at%20Atlanta's%20commercial%20buildings%20Report.pdf>>

A number of jurisdictions in North America have adopted bird-safe building design standards in order to reduce the number of bird building strikes. A majority of these guidelines have been adopted based on national, not regionally specific, research. Additionally, limited data exists on the cost of implementing them, though some of the solutions are more behavior-based, such as turning off lights, closing blinds, or including educational signage. According to City of Portland's limited number of case studies, new construction would see a less than one-half percent increase in overall building costs, and the construction can add other benefits such as solar protection and glare control, if they implemented bird-safe building design standards⁷.

The American Bird Conservancy (ABC) has developed guidelines used by several of the cities surveyed. Built upon the work of the New York City Audubon, ABC's publication *Bird-friendly Building Design* (http://www.abcbirds.org/abcprograms/policy/collisions/pdf/Bird-friendly_Building_Guide_WEB.pdf) aims to identify the nature and magnitude of the threat glass poses to birds and to provide solutions.

An overview of the standards adopted by other jurisdictions as well more information on key triggers and building design elements are provided in Attachment A. Mandatory building design guidelines are typically applied to projects located near open space and/or water bodies and voluntary guidelines are applied for the remainder of projects.

Existing San Jose Policies

The City has done some prior work on bird-safe building design. The Envision San Jose 2040 General Plan ("General Plan") includes the following policies related to bird-safe design:

1. *Environmental Resource(ER)-7.1: In the area north of Highway 237 design and construct buildings and structures using bird-friendly design and practices to reduce the potential for bird strikes for species associated with the baylands or the riparian habitats of lower Coyote Creek.*
2. *ER-7.6: Update the Riparian Corridor Policy Study and City design guidelines based on guidance from Responsible Agencies and other interested organizations on best practices for avoiding and minimizing bird strikes at new tall buildings.*

The Diridon Station Area Plan Draft Program Environmental Impact Report acknowledged the potential for artificial lighting and glass in building design to increase the risk of bird strikes, however it was not found to be a significant impact, given that the species known to occur in the Plan area are regionally abundant and adapted to urban development⁸.

Preliminary External Stakeholder Outreach

Staff has conducted preliminary outreach to stakeholders such as the Santa Clara Valley Audubon Society, Sierra Club, and the Developers and Construction Roundtable, to solicit initial feedback on bird-safe design before considering any mandatory provisions.

⁷ "Resource Guide for Bird-friendly Building Design", City of Portland. Web. July 31, 2014.
<<http://www.portlandoregon.gov/bps/article/446308>>

⁸ "Diridon Station Area Plan Draft Program Environmental Impact Report", Dec. 2013 (pg. 271), City of San José. Web. Aug. 1, 2014. <<https://www.sanjoseca.gov/DocumentCenter/View/25153>>

Environmental groups are concerned about the number of birds being killed as a result of building bird strikes and have suggested that the City adopt the ABC's *Bird Friendly Building Design* document and apply it citywide. The development community is concerned about the potential cost and extent of design guidelines, and would like additional research on the topic before considering any mandatory provisions.

Staff Recommendations

At this time, the exact severity of this issue in San Jose is unclear. National data shows bird strikes to be a problem in locations near bird habitats and specifically at buildings with certain design elements, however, the costs to mitigate these elements have not been documented. In light of the national data and preliminary research of best practices from ABC and other jurisdictions that have adopted bird friendly measures, staff believes that adopting voluntary measures in San Jose would be appropriate. Staff is thus recommending proceeding with a citywide implementation of voluntary bird friendly measures. These voluntary measures can be used in new construction and renovations as well in existing buildings as operating practices. They include:

1. Reduce large areas of transparent or reflective glass.
2. Locate water features and other bird habitat away from building exteriors to reduce reflection.
3. Reduce or eliminate the visibility of landscaped areas behind glass.
4. Reduce or eliminate spotlights on buildings.
5. Turn non-emergency lighting off at night, especially during bird migration season (February-May and August-November).

Staff has developed a fact sheet (Attachment B) that provides information on the need for bird-safe building design and outlines voluntary bird-safe measures. If directed by the Committee and City Council to proceed with implementation of the voluntary measures, this factsheet will be distributed via the City's website and the Development Services Permit Center to encourage voluntary incorporation into both new construction and renovation projects. In addition, Development Services Permit Center staff will also be trained on bird-safe building design to assist with guidance on design measures and to evaluate projects.

The national research provides guidance on the location (near waterways and open space) and design of buildings posing the greatest threat to birds, as well as the design options available to reduce that threat. For San Jose to develop and implement a bird-safe design policy with mandatory design requirements, additional work will be needed, as outlined below:

1. Gather data specific to San Jose on bird strikes, species affected, and types of buildings that pose a threat, to determine the severity of the issue.
2. Conduct additional stakeholder outreach with environmental, development, and building manager stakeholders to better understand stakeholder concerns and recommendations.
3. Understand the cost to development under various scenarios of bird-safe building design standards before recommending specific standards.

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Given current workload priorities and staffing resources in the Planning Department, staff would need to procure consultant services to complete this additional work and additional General Fund funding would need to be identified. If directed to do so by the Committee and full Council, staff can bring forward a memorandum with a workload assessment and cost estimate no later than January 2015 for City Council consideration as part of 2015-2016 budget process.

COORDINATION

This report has been coordinated with the City Attorney's Office and the Office of Economic Development.

CEQA

Not a Project, File No.PP10-069 (a), Staff Reports that involve no approvals of any City Actions.

/s/

KERRIE ROMANOW
Director, Environmental Services

/s/

HARRY FREITAS
Director, Planning, Building, and Code
Enforcement

For questions, please contact René Eyerly, Sustainability and Compliance Manager, at (408) 975-2594.

Attachments

- A - Overview of Other Jurisdictions' Bird-Safe Design Standards
- B - City of San José Bird-Friendly Voluntary Building Design Fact Sheet

Overview of Other Jurisdictions' Bird-Safe Design Standards

Jurisdiction	Method of Implementation	Mandatory or Voluntary	Solution Elements	Trigger
City of Oakland	Building Permit	Mandatory	Requires Bird Collision Reduction Plan that incorporates mandatory measures (aviation lighting, rooftop structures/antennas, use of mirrors in landscape) and best management practices	Project location in proximity to water body or open space; atrium; substantial green roof or green wall
City of Portland	Resolution	Voluntary	Encourages building design elements treating high risk exterior glass/window zones with window treatments; lighting design/use; and additional bird safety measures.	All construction projects
City and County of San Francisco	Ordinance	Voluntary	Encourages completion of checklist and "bird-safe building" designation	All construction projects not meeting the trigger(s) for mandatory measures
		Mandatory	Requires treatment with one of the building and fenestration strategies and/or glazing options identified	Project location in proximity to water body or open space; large glazing area; substantial green roof

Overview of Other Jurisdictions' Bird-Safe Design Standards

Jurisdiction	Method of Enforcement	Mandatory or Voluntary	Solution Elements	Trigger
City of Sunnyvale	Council Adoption	Voluntary	Encourages building design elements related to the use of glass; lighting design; signage; and monitoring plan	All other construction projects not meeting the trigger(s) for mandatory measures
		Mandatory	Requires building design elements and considerations related to the use of glass; lighting design; signage; and monitoring plan	Project location in proximity to water body or open space
Toronto	Incorporation into Green Building Standards	Voluntary	Encourages "enhanced" bird-friendly design via a refund of a portion of development charges Offers bird-friendly rating and acknowledgment program	All construction projects
		Mandatory	Requires building design elements related to the use of glass and lighting design	New construction using glazing and/or located in proximity to open space (depending on the project type)

The efforts already in place in other jurisdictions use common key triggers for bird-safe design and specific design elements to reduce bird mortality. Those key triggers and standard design elements are summarized below:

Overview of Other Jurisdictions' Bird-Safe Design Standards

Key Triggers

- *Building Location*
 - Buildings that are near or adjacent to large open spaces and/or water¹ attract more birds, given that they provide bird sustenance and/or habitat, and therefore offer a greater potential for bird strikes
- *Building Design*
 - Use of larger expanses of transparent or reflective glass
 - Inclusion of:
 - Atriums, particularly those with vegetation
 - Elevated skyway with reflective or transparent glass
 - Green roofs or walls
 - Interior lighting at night, especially during bird migration (typically February-May and August through November)
 - Spotlights or up-lighting
 - Landscaping design near buildings, specifically water features and other attractive habitat for birds

Standard Design Elements

The common standard solutions implemented by other jurisdictions are:

1. Mandatory application of design standards via the planning review process for, at a minimum, new construction which meets the primary location and design triggers
2. Application of the following general standards:
 - a. Attention to and alteration of building glass design in terms of fragmentation² and transparency
 - b. Strategically located landscaping to reduce its reflection and to reduce or eliminate the visibility of landscaped areas behind glass
 - c. Turning building lighting off at night
 - d. Strategic reduction or elimination of up-lighting/spotlights
 - e. Education and monitoring (e.g. signage with numbers to call when dead birds are found)

¹ Jurisdictions surveyed typically used a 1-2 acres open space and/or water body threshold.

² There are a variety of options for visually fragmenting glass including etching, screens and opaque patterns.

City of San José

Voluntary Bird-Friendly Building Design

Fact Sheet

Designing a bird-friendly building does not have to add to the cost of construction. Retrofitting an existing building can often be done by simply targeting problem areas. Consider bird-friendly best practices early on in project development to meet your project budget and demonstrate environmental leadership.

THE IMPORTANCE OF BIRDS

Birds are essential for the healthy function of our local environment. The benefits birds provide include:

- plant pollination
- seed dispersal
- insect and pest control

BIRDS AND BUILDINGS

Birds can accidentally collide with buildings, causing a decline in the bird population.

Common Causes of Collisions:

- Reflective glass that birds perceive as trees, the sky, or another bird.
- Clear glass which shows habitat or sky
- Exterior spotlights which can cause birds to collide with structures, each other, or even the ground.
- Interior lighting at night that can attract birds.



Peregrine Falcon at San José City Hall

BIRD-FRIENDLY BUILDINGS

These best practices can reduce bird collisions with buildings and are particularly important for buildings near bird habitat, such as open spaces and water.

- Reduce large areas of transparent or reflective glass.
- Strategically place landscaping:
 - Locate water features and other bird habitat away from building exteriors to reduce reflection.
 - Reduce or eliminate the visibility of landscaped areas behind glass.
- Reduce or eliminate spotlights on buildings.
- Turn non-emergency lighting off at night, especially during bird migration season (February - May and August - November). Visit www.pge.com for lighting control rebate opportunities.

The City applies the above bird-friendly principles to projects north of Highway 237 per policy ER-7.1 in Chapter 3 of the Envision San José 2040 General Plan. For more information, visit www.sanjoseca.gov/planning.

RESOURCES:

- The American Bird Conservancy's Bird-friendly Building Design guidelines: www.abcbirds.org/newsandreports/BirdFriendlyBuildingDesign.pdf
- Report Injured/Dead Birds: Contact the Wildlife Center of Silicon Valley at (408) 929-9453 or www.wcsv.org